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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/522,014

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Akira Tsujimoto

HOK-0255

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05/28/2008

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EXAMINER

ARNBERG, MEGAN C

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/522,014	<b>Applicant(s)</b> TSUJIMOTO ET AL.	
	<b>Examiner</b> MEGAN ARNBERG	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/22/2008</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashige et al. (JP 9328336) in view of Kimura et al. (WO 98/15600 using U.S. Pat. 6,407,033 as the English Translation). The English language translation of the Japanese patent is used for the citations below.

Regarding claims 1, 2, 6, 7: Takashige et al. teaches a composition comprising TiO<sub>2</sub> (para. 8), a zirconium containing compound such as Zr(C<sub>5</sub>H<sub>7</sub>O<sub>3</sub>)(OBU)<sub>3</sub> (para. 33)

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which has the same structure as the claimed  $\text{Zr}(\text{OC}_4\text{H}_9)_3(\text{C}_5\text{H}_7\text{O}_2)$ , and a hydrolyzable silicone resin (para. 15). The zirconium component to the titanium component is 0.02-0.5 to 1 (para. 18), which overlaps the claimed ranges. The amount of the silicone component to the titanium component is 0.2-2.5 to 1 (para. 19), which overlaps the claimed range. The titanium particles are dispersed and homogenous since they have been agitated for an hour (para. 33).

Takashige et al. does not teach  $\text{SiO}_2$  particles in the mixture. However, Kimura et al. teaches a similar coating composition comprising a zirconium component, a silicone component and a titanium oxide component. The silica sol/colloidal silica (col. 15 lines 24-26) is used in an amount of silica to silicone of 0.76:1 (example 8, table 1). Takashige et al. and Kimura et al. are combinable because they are both concerned with the same field of endeavor, namely silicone, titanium oxide and zirconium component coatings. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the colloidal silica of Kimura et al. with the composition of Takashige et al. and would have been motivated to do so for such desirable properties as a carrier for the photocatalyst, which improves adhesiveness, as evidenced by Kimura et al. (col. 2 lines 10-63).

Regarding claim 4: Takashige et al. teaches a coat/film obtained after heat-treating/curing (para. 34)

Regarding claim 5: Takashige et al. teaches a glass substrate/coated article having a cured coat/film obtained after heat-treating/curing (para. 34).

Regarding claim 8: Takashige et al. teaches a single layer in that no interlayers are necessary and it is applied directly to a base material (para. 23).

Regarding claim 9: While Takashige et al. does not directly teach that the Zr component accelerates cross-linkage, since it is in the composition, it implicitly acts to accelerate the cross-linkage. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with these properties.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takashige et al. (JP 9328336) in view of Kimura et al. (WO 98/15600 using U.S. Pat. 6,407,033 as the English Translation) as applied to claim 1 above and when taken with Koyanagi et al. (U.S. Pat. 7,192,986). The English language translation of the Japanese patent is used for the citations below.

Regarding claim 3: Takashige et al. teaches the silica sol Z-1, trade name Cataloid SI-30 (col. 15 lines 24-26) but does not teach the particle size. Koyanagi et al., however, teaches that Cataloid SI-30 has a mean particle size of 12 nm (col. 8, Example 13, lines 59-62).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGAN ARNBERG whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO/  
Supervisory Patent Examiner, Art Unit 1796  
24-May-08

/M. A./  
Examiner, Art Unit 1796